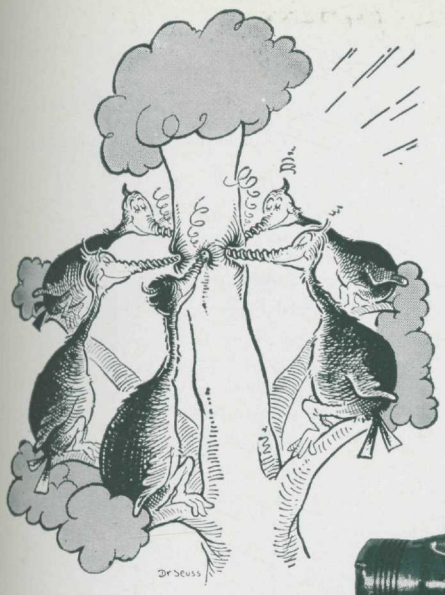
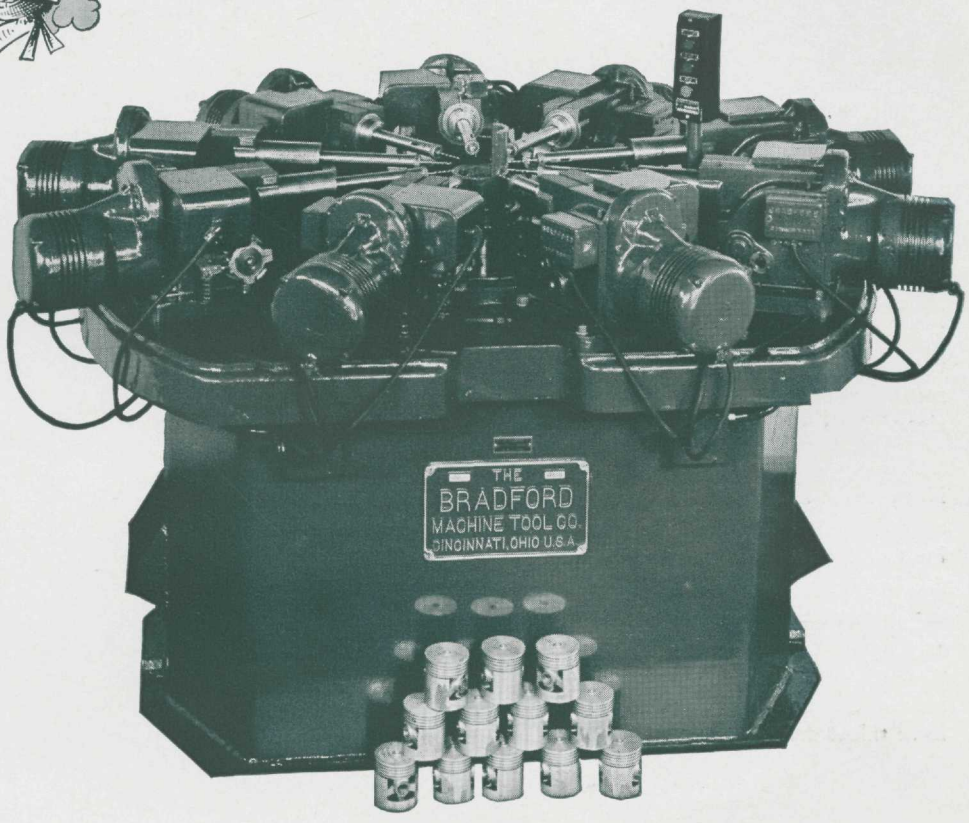


The Sapjap Calls It Heaven

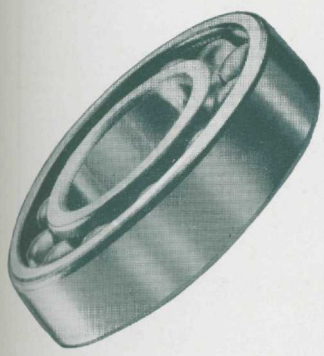
He sits all day, drilling the beautiful wood. He has lots of time. Holes won't be spaced right, but he doesn't care. He thinks it's champagne—the sap.

How different his neighbor below. It has work to do—fast, accurate, continuous work. 10,800 holes per hour, 14,400 pistons per day. No time to adjust or fuss with bearings.



America Demands Speed . . .

and gets it in this 9-spindle Bradford Drilling Machine. 92 New Departure ball bearings support its rapid fire spindles and other vital parts. 92 positions where accuracy and rigidity are permanently assured. It's no Sapjap.



. . . **Engineers Only:** A special bearing requires extra tooling and different machine set-ups—delays the delivery of many standard bearings. To speed war production, consult a New Departure engineer as to availability of bearing types and sizes. Do this when your design is still "on the board." New Departure, Division of General Motors, Bristol, Conn. Detroit, Chicago, San Francisco.

New Departure

THE FORGED STEEL BEARING

3078

EDWARD L. KLOSE
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G-E Campus News

NAVY CLASSROOM

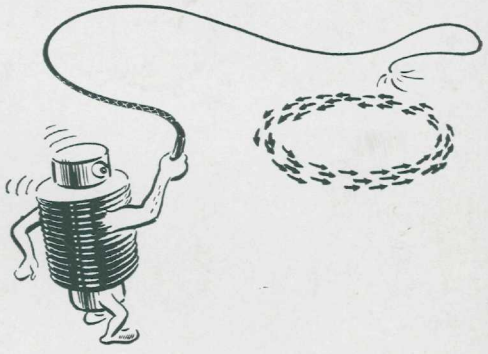
A U.S. submarine is essentially an electric-propelled vehicle, and an amazing amount of electric equipment is packed away in its steel hull. Responsibility for operation, maintenance, and repair of all this electric equipment is in the hands of two classes of petty officers—chief electrician's mates and electrician's mates first class.

For years General Electric has collaborated with the Navy in providing instruction for such men. They are shown how all kinds of equipment aboard their ships is built and assembled. Thus petty officers are better qualified both to care for electric propulsion and other apparatus in normal service and to repair it in case of emergency. This training has lately been accelerated. G-E plants are seldom without groups of these visiting Navy men, and in the past two years more than 50 petty officers have taken the "course."

100 TIMES TOO BRIGHT

IN the early days of electric lights, economical city fathers used to turn out the street lamps on nights when there was a full moon. For the best blackout techniques today, even moonlight is 100 times too bright. But although air-raid wardens can't do anything about the moon, for overcast nights General Electric's illuminating laboratory has developed a special street light which produces illumination about equal to starlight.

The fixture contains a 10-watt lamp, so concealed that the only light visible comes through a circular narrow piece of plastic around the side. A projecting black canopy screens the light from the eyes of aviators. The light output, equivalent to that from a single candle flame, seems at first sight to be practically zero. But after a little time eyes become adjusted, as they do in a movie theatre, and objects can be dimly seen 30 to 40 feet away. Specifications for the new lamp are based on the experience of the British in their blackouts.



ELECTRON WHIRLIGIG

WHETHER you call it a "rheotron" or "betatron" or by its longer name of "induction electron accelerator," a new science tool recently built by Dr. Donald W. Kerst in the G-E Research Laboratory is one of the world's most potent merry-go-rounds. On it, electrons ride to a speed closely approximating that of light—equivalent to that produced by 20 million volts. Copper bombarded by these dizzy, super-speed electrons becomes temporarily radioactive, and other interesting possibilities are being investigated.

Dr. Kerst, young professor at the University of Illinois, got the idea for the device, built a small model, and came to General Electric to build a bigger one. Like the much-publicized cyclotron, except that it accelerates electrons instead of positive ions, the device chases the charged particles round and round in a magnetic field, adding to their speed at every revolution. Scientists are reticent about predicting what the rheotron's chief use will be, but it is promising enough so that a bigger one is being built in the G-E laboratory for speeds of 100 million volts.

GENERAL ELECTRIC

953-37-211